Docket No.: 285336US0PCT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: GROUP: 1794
CARINNE FLEURY ET AL

SERIAL NO: 10/567,901 EXAMINER: NELSON

FILED: DECEMBER 7, 2006

FOR: TRANSPARENT SUBSTRATE COMPRISING AN ANTIREFLECTION COATING

DECLARATION UNDER 37 C.F.R. § 1.132

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

Sir:

Now comes Stephanie ROCHE who deposes and states that:

1. I am a graduate of Paris XI University and received my PhD degree in the year 2001.

2. I have been employed by Saint-Gobain Recherche for 4 years as a Research Engineer in the field of thin film deposition.

3. I am familiar with the specification and claims of the application.

4. One aspect of the claims and the technology described in the application is the selection of the atomic percentage of zirconium within the high index layer of the antireflection coating to be such that the ratio of Si/Zr is between 4.6 and 5.

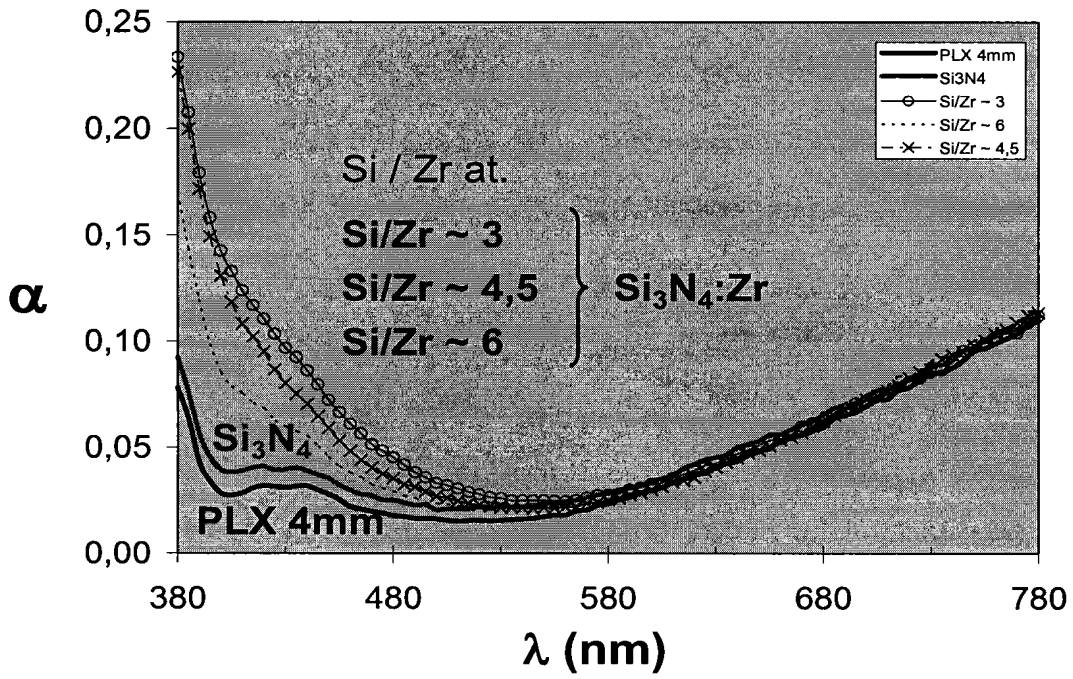
5. The documents cited by the U.S. patent office do not describe any information concerning the ratio between the silicon and the zirconium.

6. With the ratio between 4.6 and 5, we see improvements in the refractive index of the high refractive layer which is included in the antireflective stack and thus, in turn, improves the optical property of the antireflective stack and particularly the reflection (Rl %) is less than the same stack without doped material.

7. The influence of the Zr atomic percentage relative to Si in the sputtering target on the absorption of the layer is that if the Si/Zr ratio is above 5, an increase of the absorption for

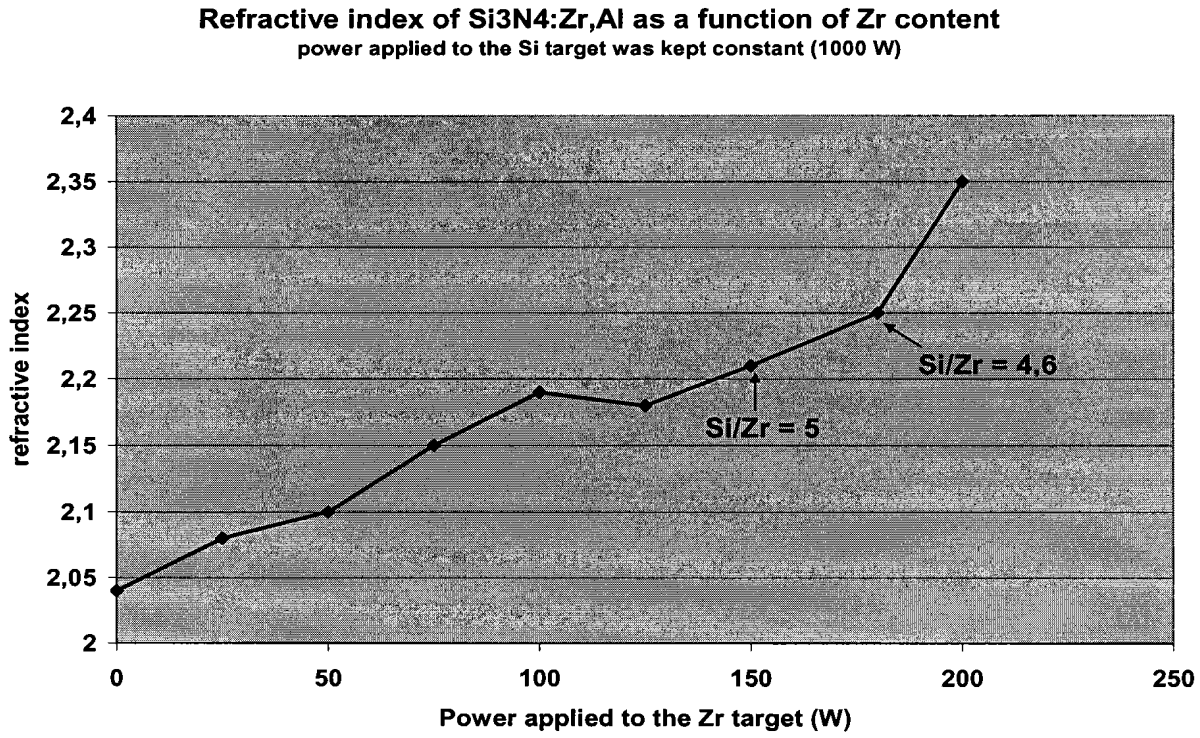
wavelength < 500 nm occurs, something that diminishes the performance of the antireflection coating. Also, with a higher ratio (greater than 5), the coating will have a yellowish appearance of the coated glass (in transmission), something that is not desirable in terms of light transmission.

8. If measurements are performed for layer thicknesses = 110 nm of different atomic percentages of Zr (relative to Si), where $\alpha = (1-R-T)/(1-R)$: ratio between the light absorbed in the layer (+glass) and the light which is not reflected by the system (i.e. transmitted + absorbed)



9. These data show the variation of the absorbed light in the system (glass + coating - 110 nm thick) as a function of the incident light wavelength.

10. If the refractive index is assessed as a function of Zr content, the results are graphically presented below.



11. For lower values of Si/Zr (below 4.6), the increase of the refractive index due to the addition of zirconium in the target is not sufficient and for higher values (greater than 5) the refractive index is not optimal for purposes of absorption in the antireflection coating.

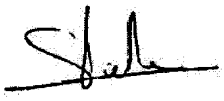
Criterion $n_{550} > 2.2$: refractive index determined at 550 nm (incident wavelength)

For integrated values, **choice to keep the luminous absorbance ($A_l = 1-T_l-R_l$) lower than 1,5%**

n_{550}	Absorption
	Glass + coating
2,04	<1%
2,08	<1%
2,1	<1%
2,15	<1%
2,19	<1%
2,18	<1,5%
2,21	**<1,5%**
2,25	**<1,5%**
2,35	>2%

12. The undersigned petitioner declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

Signature



Date 23/09/2008